Incentive Level Analysis

Workshop on the Design of the New Solar Homes Partnership

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And

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Objective

- Propose incentive level, incentive decline, and trigger mechanism
- Evaluate reasonableness

Program Goals / Key Assumptions

- 400 MW PV installations
- $2.25 per Watt starting incentive rate for smooth transition from ERP to NSHP
- Declining incentives to zero
- 35% market growth rate
- $300 Million incentive budget

Program Goals / Key Assumptions

- $8.50 per Watt PV system price
- 2 kW PV systems that produce 3,050 kWh/year
- 18 cents/kWh electricity price w/ 3% escalation
- 30% tax credit capped at $2,000
- 30-year 6 ¾% home mortgage financing
- 28% federal & 9% state income tax brackets

Methodology

- Design incentive structure to satisfy goals
- Calculate cost-effectiveness
- Determine implied market demand

Incentive Structure

- Consistent with program goals
- Structure is based on
  - Current ERP incentive calculation methodology
  - Incentive decline that works for calendar trigger and/or volume (MW) trigger assuming exponential market growth

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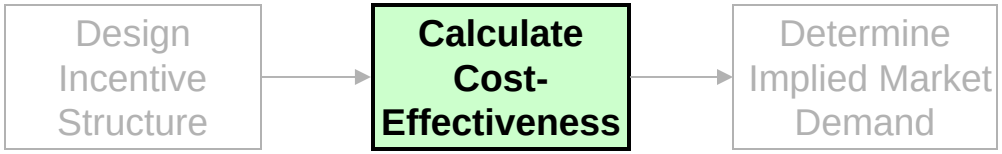

1st Year Net Savings = Benefits - Costs

- Costs
  - **Loan payment for PV system**
  - **Projected inverter replacement cost**
  - Other maintenance costs (minor, not included)

- Benefits
  - **1st year utility savings**
  - **Loan interest tax savings**
  - Increased property value (initially included in utility savings)
  - Environmental and utility system benefits (not included)

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Implied Market Demand

- Estimate total market potential
- Divide NSHP solar home sales by total homes sold to get market penetration

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Design Incentive Structure → Calculate Cost-Effectiveness → Determine Implied Market Demand

Incentive Structure

	Incentive ($/W$_{AC-CEC}$)	Volume (MW$_{AC-CEC}$)
2007	$2.25	7
2008	$2.03	10
2009	$1.80	13
2010	$1.58	18
2011	$1.35	24
2012	$1.13	33
2013	$0.90	44
2014	$0.68	60
2015	$0.45	81
2016	$0.23	109

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Design Incentive Structure → **Calculate Cost-Effectiveness** → Determine Implied Market Demand

Cost-Effectiveness

Incentive Structure

	Incentive ($/W$_{AC\text{-}CEC}$)	Volume (MW$_{AC\text{-}CEC}$)	Net Savings ($/kWh)
2007	$2.25	7	$ (0.02)
2008	$2.03	10	$ (0.01)
2009	$1.80	13	$ 0.00
2010	$1.58	18	$ 0.01
2011	$1.35	24	$ 0.03
2012	$1.13	33	$ 0.04
2013	$0.90	44	$ 0.05
2014	$0.68	60	$ 0.06
2015	$0.45	81	$ 0.07
2016	$0.23	109	$ 0.08

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Cost-Effectiveness

Market Sales

Incentive

Structure

	Incentive ($/W$_{AC-CEC}$)	Volume (MW$_{AC-CEC}$)	Net Savings ($/kWh)	Market Sales
2007	$2.25	7	$ (0.02)	3.1%
2008	$2.03	10	$ (0.01)	3.9%
2009	$1.80	13	$ 0.00	5.0%
2010	$1.58	18	$ 0.01	6.5%
2011	$1.35	24	$ 0.03	8.3%
2012	$1.13	33	$ 0.04	10.7%
2013	$0.90	44	$ 0.05	13.8%
2014	$0.68	60	$ 0.06	17.7%
2015	$0.45	81	$ 0.07	22.8%
2016	$0.23	109	$ 0.08	29.3%

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Design Incentive Structure → Calculate Cost-Effectiveness → **Determine Implied Market Demand**

Cost-Effectiveness

Market Sales

Incentive Structure

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Implied Market Demand

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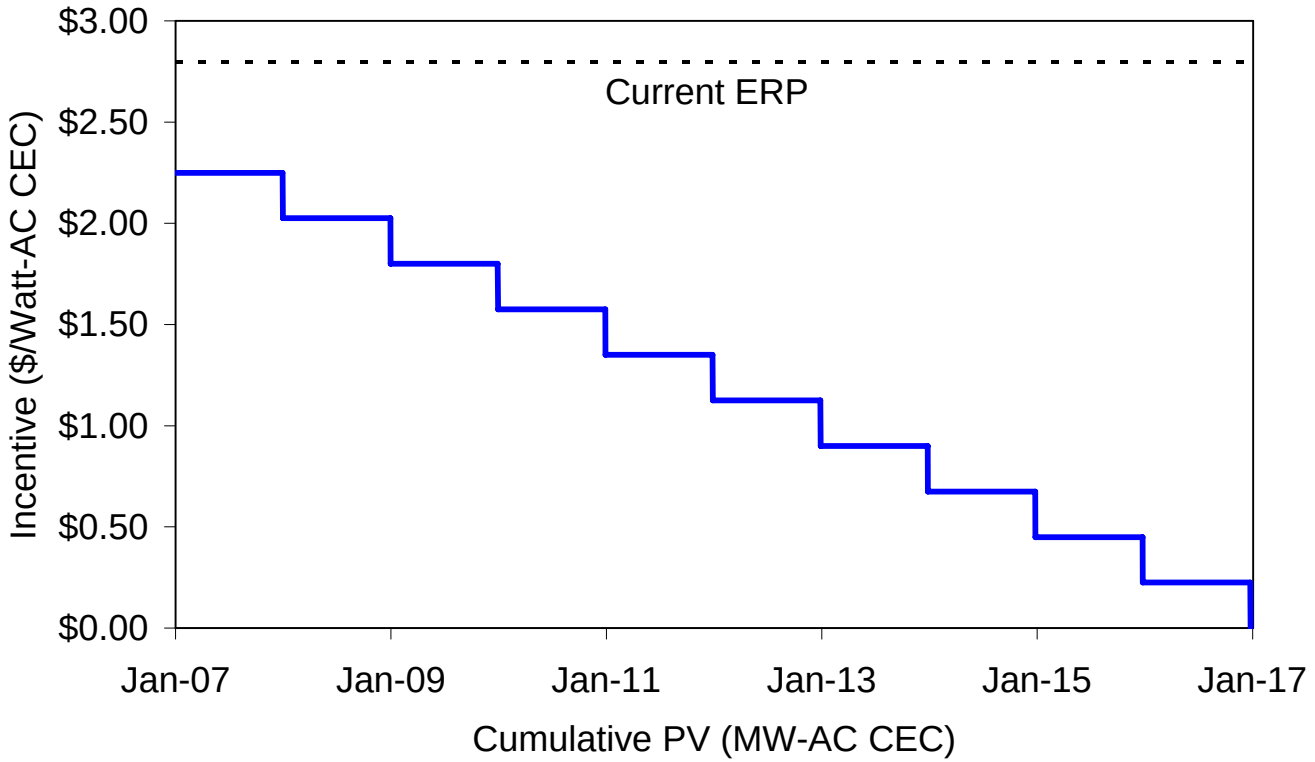
Design Incentive Structure → Calculate Cost-Effectiveness → Determine Implied Market Demand

Incentive Structure (Calendar Trigger)



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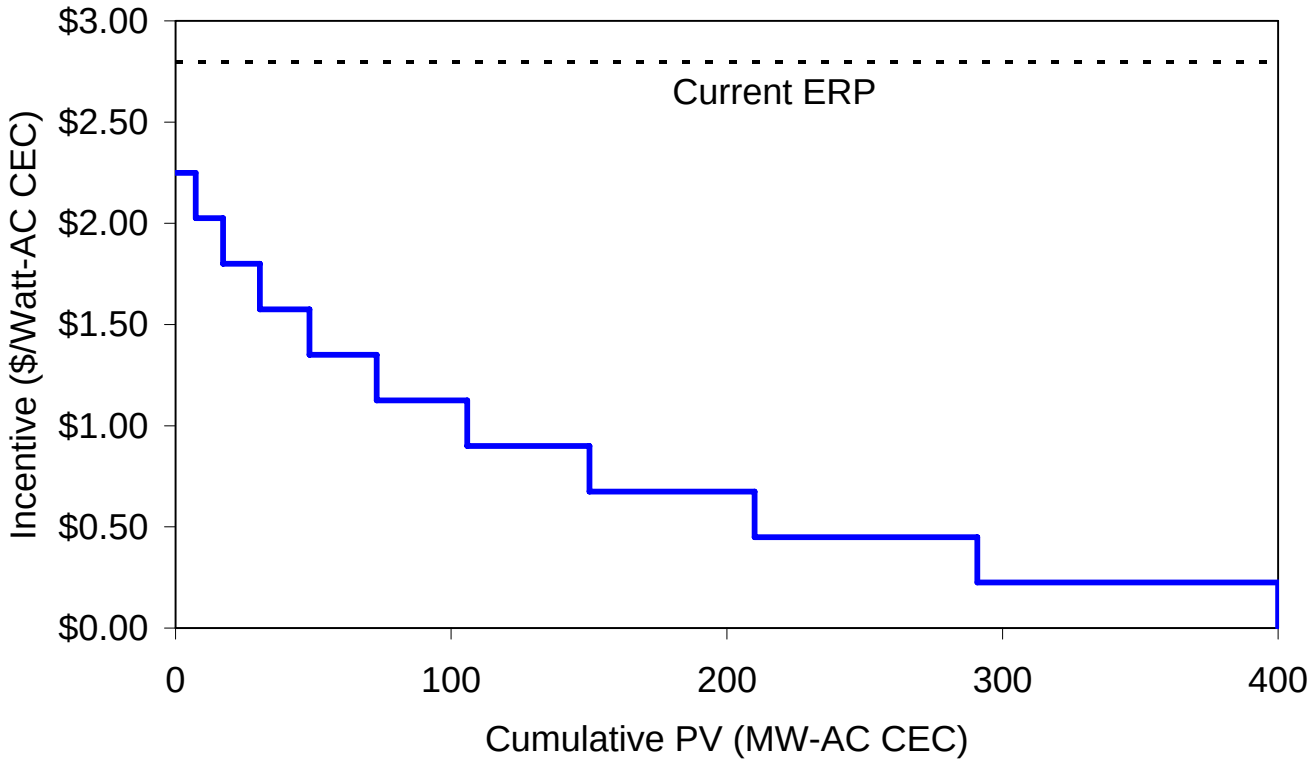
Design Incentive Structure → Calculate Cost-Effectiveness → Determine Implied Market Demand

Incentive Structure (Volume Trigger)



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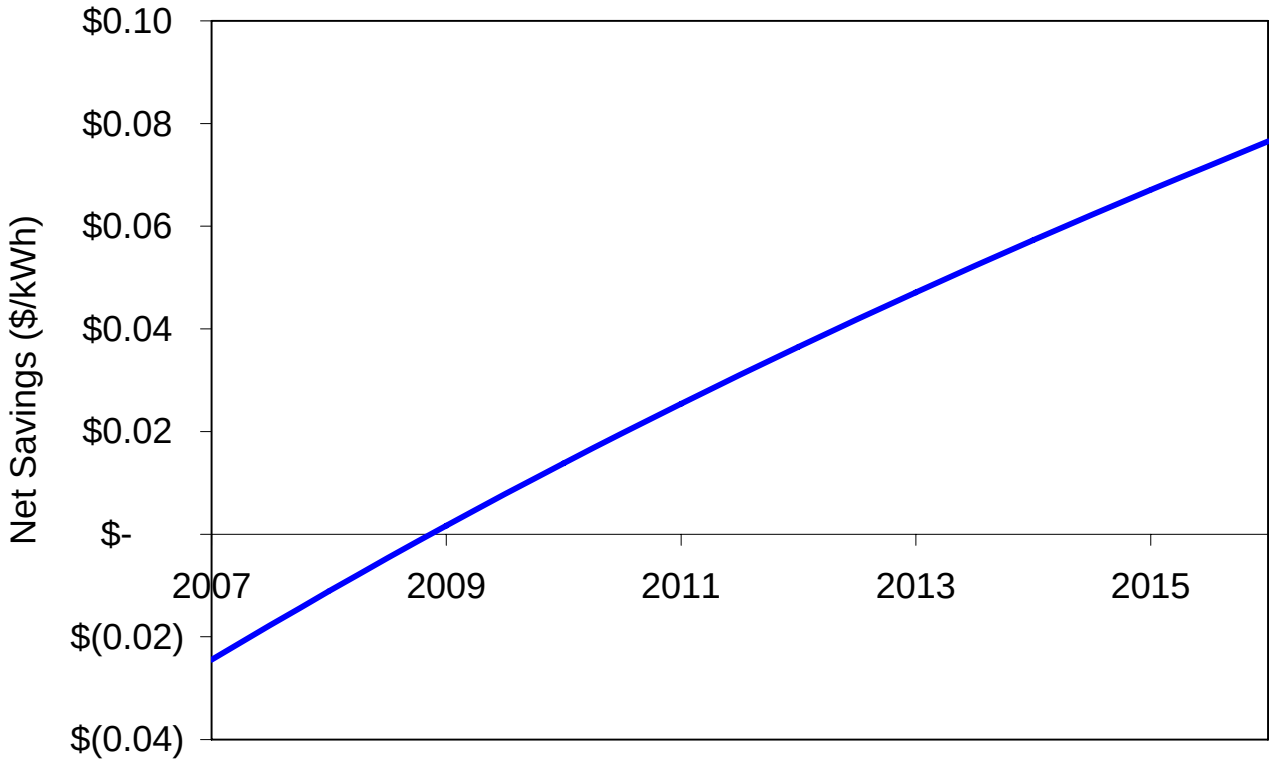
Design Incentive Structure → **Calculate Cost-Effectiveness** → Determine Implied Market Demand

First Year Net Savings ($/kWh)



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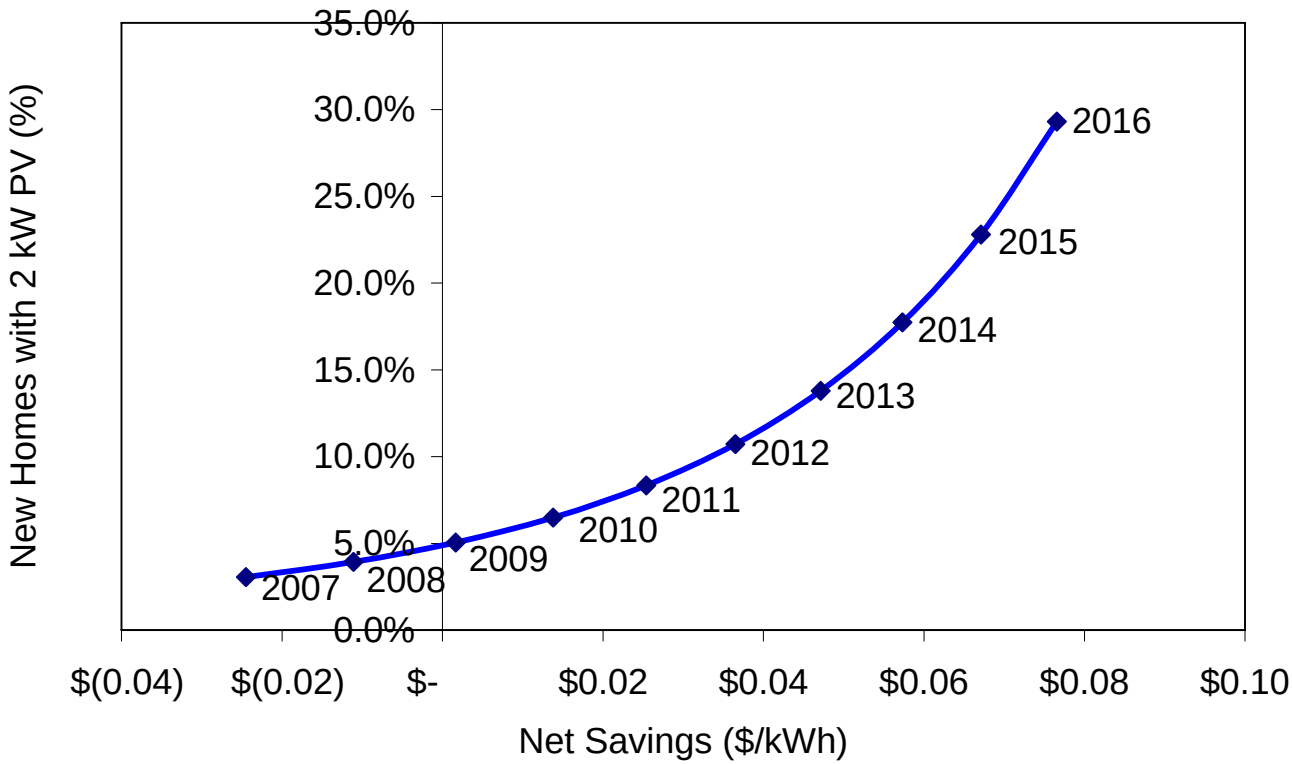
Design Incentive Structure → Calculate Cost-Effectiveness → **Determine Implied Market Demand**

Implied Market Demand



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Evaluate Reasonableness

- Assume point to evaluate reasonableness is 1st year net savings of 0¢ per kWh
- If 5% of new homes will install systems at evaluation point, 400 MW goal with $300 Million budget is realistic & incentive should start at $2.25 per Watt

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Progress Tracking and Corrective Action

- Additional marketing may be required to achieve greater market demand
- May need to adjust budget or MW goals in response to actual market demand over time